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ENKEL: 833

09/554914  
526 Rec'd PCT/PTO 22 MAY 2000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Jan HEMMINGSSON

SERIAL NUMBER: NEW U.S. PCT APPLICATION (based on PCT/SE98/02163)

FILED: HEREWITH

FOR: A ROTATING ELECTRIC MACHINE WITH A MAGNETIC CORE

REQUEST FOR CONSIDERATION OF DOCUMENTS  
CITED IN INTERNATIONAL SEARCH REPORT

Assistant Commissioner for Patents  
Washington, D.C. 20231


Sir:

In the matter of the above-identified application for patent, notice is hereby given that applicant(s) request that the Examiner consider the documents cited in the International Search Report according to MPEP §609 and so indicate by a statement in the first Office Action that the information has been considered. When the Form PCT/DO/EO/903 indicates both the search report and copies of the documents are present in the national stage file, there is no requirement for the applicant(s) to submit them (1156 O.G. 91 November 23, 1993).

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.

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# PATENT COOPERATION TREATY

## PCT

1999 -03- 12

### INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>P 98-569/LK</b>	<div style="display: flex; justify-content: space-between;"> <div><b>FOR FURTHER ACTION</b></div> <div>see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.</div> </div>	
International application No. <b>PCT/SE 98/02163</b>	International filing date (day/month/year) <b>27 November 1998</b>	(Earliest) Priority Date (day/month/year) <b>27 November 1997</b>
Applicant <b>Asea Brown Boveri AB et al</b>		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 2 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. ☐ Certain claims were found unsearchable (See Box I).
2. ☐ Unity of invention is lacking (See Box II).
3. ☐ The international application contains disclosure of a nucleotide and/or amino acid sequence listing and the international search was carried out on the basis of the sequence listing
 

☐ filed with the international application.  
☐ furnished by the applicant separately from the international application,  

☐ but not accompanied by a statement to the effect that it did not include matter going beyond the disclosure in the international application as filed.

☐ transcribed by this Authority.
4. With regard to the title, ☒ the text is approved as submitted by the applicant.  
☐ the text has been established by this Authority to read as follows:
5. With regard to the abstract,
 

☒ the text is approved as submitted by the applicant.  
☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.
6. The figure of the drawings to be published with the abstract is:
 

Figure No. 2

☒ as suggested by the applicant.  
☐ because the applicant failed to suggest a figure.  
☐ because this figure better characterizes the invention.

☐ None of the figures.

1  
INTERNATIONAL SEARCH REPORT

International Application No.

PCT/SE 98/02163

## A. CLASSIFICATION OF SUBJECT MATTER

IPC6: H02K 1/16, H02K 3/48

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC6: H02K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GB 2283133 A (GENERAL ELECTRIC COMPANY), 26 April 1995 (26.04.95), figure 18 ---	1-17
A	FR 2467502 A1 (DUCELLIER & CIE), 17 April 1981 (17.04.81), figure 2 ---	1-17
A	CH 534448 A5 (SIEMENS AKTIENGESSELLSCHAFT), 28 February 1973 (28.02.73), figure 1 ---	1-17
A	SU 955369 A (SCI SECT GIDROPROEKT RES INST), 30 August 1982 (30.08.82), figure 4 -----	1-17

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search

1 March 1999

Date of mailing of the international search report

11 -03- 1999

Name and mailing address of the ISA/

Swedish Patent Office

Box 5055, S-102 42 STOCKHOLM

Facsimile No. +46 8 666 02 86

Authorized officer

Gordana Ninkovic

Telephone No. +46 8 782 25 00

**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

02/02/99

International Publication No.  
PCT/SE 98/02163

Patent document cited in search report			Publication date	Patent family member(s)	Publication date
GB	2283133	A	26/04/95	CA 2118067 A	21/04/95
				DE 4436898 A	27/04/95
				GB 9420099 D	00/00/00
				GB 9710022 D	00/00/00
				GB 9710024 D	00/00/00
				GB 9710026 D	00/00/00
				IT 1274580 B	17/07/97
				IT MI942135 A	20/04/95
				US 5636432 A	10/06/97
				US 5640064 A	17/06/97
				US 5668429 A	16/09/97
FR	2467502	A1	17/04/81	NONE	
CH	534448	A5	28/02/73	DE 2111086 A	14/09/72
SU	955369	A	30/08/82	NONE	

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/SE 99/00943

## A. CLASSIFICATION OF SUBJECT MATTER

IPC7: H02J 3/36  
According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: H02J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
D,A	WO 9745908 A1 (SIEMENS AKTIENGESSELLSCHAFT), 4 December 1997 (04.12.97), figure 3, abstract	1-27
A	WO 9843336 A2 (ASEA BROWN BOVERI AB), 1 October 1998 (01.10.98), page 7, line 1 - line 10, figure 1	1-27
A	US 5499178 A (NED MOHAN), 12 March 1996 (12.03.96), column 13, line 5 - line 31, figure 8	1-27

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:	-I- later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier document but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search  
16 February 2000

Date of mailing of the international search report  
22 -02- 2000

Name and mailing address of the ISA/  
Swedish Patent Office  
Box 5055, S-102 42 STOCKHOLM  
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Authorized officer  
Tomas Erlandsson/mj  
Telephone No. +46 8 782 25 00

INTERNATIONAL SEARCH REPORT  
Information on patent family members

International application No.  
PCT/SE 99/00943

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9745908 A1	04/12/97	DE 19620906 A	08/01/98
		EP 0939995 A	08/09/99
WO 9843336 A2	01/10/98	AU 3468797 A	21/01/98
		CA 2218942 A	24/09/98
		EP 0909354 A	21/04/99
		SE 9701060 A	04/03/98
		SE 9703329 A	25/09/98
		US 5980095 A	09/11/99
US 5499178 A	12/03/96	WO 9418683 A	18/08/94
		EP 0617858 A	05/10/94
		JP 7502160 T	02/03/95
		US 5345375 A	06/09/94
		WO 9312576 A	24/06/93

## PATENT COOPERATION TREATY

PCT

From the INTERNATIONAL BUREAU

NOTIFICATION OF THE RECORDING  
OF A CHANGE(PCT Rule 92bis.1 and  
Administrative Instructions, Section 422)

To:

KARLSSON, Leif  
L.A. Groth & Co. KB  
P.O. Box 6107  
S-102 32 Stockholm  
SUÈDE

Date of mailing (day/month/year) 17 September 1999 (17.09.99)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference P 98-569/LK	
International application No. PCT/SE98/02163	International filing date (day/month/year) 27 November 1998 (27.11.98)

## 1. The following indications appeared on record concerning:

☒ the applicant    ☐ the inventor    ☐ the agent    ☐ the common representative

Name and Address

ASEA BROWN BOVERI AB  
S-721 83 Västerås  
Sweden

State of Nationality

SE

State of Residence

SE

Telephone No.

Facsimile No.

Teleprinter No.

## 2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☐ the person    ☒ the name    ☐ the address    ☐ the nationality    ☐ the residence

Name and Address

ABB AB  
S-721 83 Västerås  
Sweden

State of Nationality

SE

State of Residence

SE

Telephone No.

Facsimile No.

Teleprinter No.

## 3. Further observations, if necessary:

## 4. A copy of this notification has been sent to:

<input checked="" type="checkbox"/> the receiving Office	<input type="checkbox"/> the designated Offices concerned
<input type="checkbox"/> the International Searching Authority	<input checked="" type="checkbox"/> the elected Offices concerned
<input checked="" type="checkbox"/> the International Preliminary Examining Authority	<input type="checkbox"/> other:

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

S. De Michiel

Telephone No.: (41-22) 338.83.38

## PATENT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents  
United States Patent and Trademark  
Office  
Box PCT  
Washington, D.C.20231  
ÉTATS-UNIS D'AMÉRIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 11 August 1999 (11.08.99)	
International application No. PCT/SE98/02163	Applicant's or agent's file reference P 98-569/LK
International filing date (day/month/year) 27 November 1998 (27.11.98)	Priority date (day/month/year) 27 November 1997 (27.11.97)
Applicant HEMMINGSSON, Jan	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:  
23 June 1999 (23.06.99)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was  
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

A. Karkachi

Telephone No.: (41-22) 338.83.38

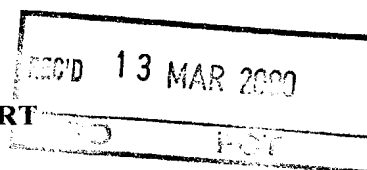


M-14

16

PATENT COOPERATION TREATY  
**PCT**  
INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference P 98-569 LK/uh	<b>FOR FURTHER ACTION</b>	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/SE98/02163	International filing date (day/month/year) 27.11.1998	Priority date (day/month/year) 27.11.1997
International Patent Classification (IPC) or national classification and IPC7 H 02 K 1/16, H 02 K 3/48		
Applicant ABB AB et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 3 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of \_\_\_\_\_ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability, citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand  23.06.1999	Date of completion of this report  03.03.2000
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. 08-667 72 88	Authorized officer  Tomas Erlandsson/mj Telephone No. 08-782 25 00

Form PCT/IPEA/409 (cover sheet) (January 1994)

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/SE98/02163

## I Basis of the report

1. This report has been drawn on the basis of *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.)*:

- ☒ the international application as originally filed.
- ☐ the description, pages \_\_\_\_\_, as originally filed,  
 pages \_\_\_\_\_, filed with the demand,  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_,  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_.
- ☐ the claims, Nos. \_\_\_\_\_, as originally filed,  
 Nos. \_\_\_\_\_, as amended under Article 19,  
 Nos. \_\_\_\_\_, filed with the demand,  
 Nos. \_\_\_\_\_, filed with the letter of \_\_\_\_\_,  
 Nos. \_\_\_\_\_, filed with the letter of \_\_\_\_\_.
- ☐ the drawings, sheets/fig \_\_\_\_\_, as originally filed,  
 sheets/fig \_\_\_\_\_, filed with the demand  
 sheets/fig \_\_\_\_\_, filed with the letter of \_\_\_\_\_,  
 sheets/fig \_\_\_\_\_, filed with the letter of \_\_\_\_\_.

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the supplemental Box (Rule 70.2(c)).

4. Additional observations, if necessary:

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
PCT/SE98/02163

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Claims	<u>1-17</u>	YES
	Claims		NO
Inventive step (IS)	Claims	<u>1-17</u>	YES
	Claims		NO
Industrial applicability (IA)	Claims	<u>1-17</u>	YES
	Claims		NO

### 2. Citations and explanations

The claimed invention relates to a rotating electric machine for high voltages. The winding of the machine constitutes a flexible high voltage cable. The cable comprises a conductive core surrounded by two semiconducting layers and an intermediate insulating layer. By the use of a high voltage cable, a rotating electric machine can be connected to a power network without an intermediary transformer. At least two adjacently located winding parts in a slot are displaced in the circumferential direction relative to each other. By this measure the size and weight of the machine may be reduced.

Documents cited in the International Search Report:

D1 GB 2283133 A  
D2 FR 2467502 A1  
D3 CH 534448 A5

Documents D1-D3 disclose rotating electric machines with winding parts arranged as in independent claim 1. However, these windings are of conventional type. The teachings of D1-D3 do not give a person skilled in the art any reason to consider using a high voltage cable as winding in a rotating electric machine. Consequently, the invention according to claim 1 is considered to involve an inventive step.

The invention according to claims 1-17 is novel, is considered to involve an inventive step and has industrial applicability.

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION  
International Bureau



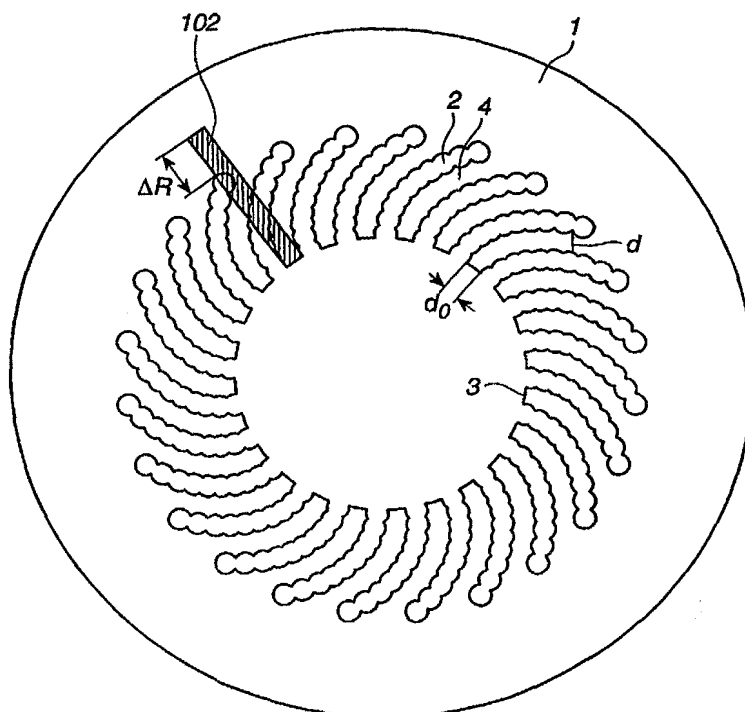
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>6</sup> : <b>H02K 1/16, 3/48</b>		A1	(11) International Publication Number: <b>WO 99/29011</b>
			(43) International Publication Date: 10 June 1999 (10.06.99)
(21) International Application Number: PCT/SE98/02163 (22) International Filing Date: 27 November 1998 (27.11.98) (30) Priority Data: 9704381-4 27 November 1997 (27.11.97) SE (71) Applicant (for all designated States except US): ASEA BROWN BOVERI AB [SE/SE]; S-721 83 Västerås (SE). (72) Inventor; and (75) Inventor/Applicant (for US only): HEMMINGSSON, Jan [SE/SE]; Regementsgatan 15, S-723 45 Västerås (SE). (74) Agents: KARLSSON, Leif et al.; L.A. Groth & Co. KB, P.O. Box 6107, S-102 32 Stockholm (SE).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), EE, ES, FI, FI (Utility model), GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (Utility model), SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).  Published With international search report.	

(54) Title: A ROTATING ELECTRIC MACHINE WITH A MAGNETIC CORE

(57) Abstract

The invention relates to a rotating electric machine with a magnetic core (1). The core (1) is provided with slots (2) for a winding. According to the invention, the winding comprises an electric conductor for high voltage. During at least one full winding turn, the winding is provided with means for essentially enclosing its electric fields. Further, according to the invention, the winding parts in a slot (2) are displaced in the circumferential direction relative to each other.



**FOR THE PURPOSES OF INFORMATION ONLY**

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

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AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
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BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
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CN	China	KZ	Kazakhstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LJ	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/SE 98/02163

## A. CLASSIFICATION OF SUBJECT MATTER

IPC6: H02K 1/16, H02K 3/48

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC6: H02K

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SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GB 2283133 A (GENERAL ELECTRIC COMPANY), 26 April 1995 (26.04.95), figure 18 --	1-17
A	FR 2467502 A1 (DUCELLIER & CIE), 17 April 1981 (17.04.81), figure 2 --	1-17
A	CH 534448 A5 (SIEMENS AKTIENGESELLSCHAFT), 28 February 1973 (28.02.73), figure 1 --	1-17
A	SU 955369 A (SCI SECT GIDROPROEKT RES INST), 30 August 1982 (30.08.82), figure 4 -- -----	1-17

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

\* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"F" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

1 March 1999

Date of mailing of the international search report

11 -03- 1999

Name and mailing address of the ISA/  
Swedish Patent Office  
Box 5055, S-102 42 STOCKHOLM  
Facsimile No. +46 8 666 02 86

Authorized officer

Gordana Ninkovic  
Telephone No. +46 8 782 25 00

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

PCT/SE 98/02163

Patent document cited in search report			Publication date	Patent family member(s)		Publication date
GB	2283133	A	26/04/95	CA	2118067 A	21/04/95
				DE	4436898 A	27/04/95
				GB	9420099 D	00/00/00
				GB	9710022 D	00/00/00
				GB	9710024 D	00/00/00
				GB	9710026 D	00/00/00
				IT	1274580 B	17/07/97
				IT	MI942135 A	20/04/95
				US	5636432 A	10/06/97
				US	5640064 A	17/06/97
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